Draft for Comment

U.S. NUCLEAR REGULATORY COMMISSION

DESIGN-SPECIFIC REVIEW STANDARD FOR NuScale SMR DESIGN

8.1 ELECTRIC POWER – INTRODUCTION

REVIEW RESPONSIBILITIES

Primary - Organization responsible for electrical engineering

Secondary - None

I. AREAS OF REVIEW

The specific areas of review are as follows:

1. The applicant's description of the offsite power system with regard to the interrelationships between the nuclear unit(s), the utility grid, and any interconnecting grids.

2. The applicant's description of the onsite power systems with regard to the availability of sufficient power to mitigate design-basis events given a loss of the offsite power system and a single failure in the onsite power system.

3. The applicant's description of the capability to withstand and recover from a station blackout (SBO) event of a specified duration. For passive plants, this duration has been established as 72 hours without operator intervention[1] (refer to Standard Review Plan (SRP) Section 19.3 for post design-basis accident and beyond 72 hour requirements).

4. The acceptance criteria to be implemented in the design of the above systems.

5. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC). For design certification (DC) and combined license (COL) reviews, the staff reviews the applicant's proposed ITAAC associated with the structures, systems, and components (SSCs) related to this design-specific review standard (DSRS) section in accordance with SRP Section 14.3, "Inspections, Tests, Analyses, and Acceptance Criteria." The staff recognizes that the review of ITAAC cannot be completed until after the rest of this portion of the application has been reviewed against acceptance criteria contained in this DSRS section. Furthermore, the staff reviews the ITAAC to ensure that all SSCs in this area of review are identified and addressed as appropriate in accordance with SRP Section 14.3.

6. COL Action Items and Certification Requirements and Restrictions. For a DC application, the review will also address COL action items and requirements and restrictions (e.g., interface requirements and site parameters).

   For a COL application referencing a DC, a COL applicant must address COL action items (referred to as COL license information in certain DCs) included in the referenced

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[1] Refer to SECY-94-084, March 28, 1994 (ADAMS Accession No. ML003708098)

ADAMS Accession No. ML15146A269

DC. Additionally, a COL applicant must address requirements and restrictions (e.g., interface requirements and site parameters) included in the referenced DC.

Review Interfaces

DSRS Sections 8.2, 8.3.1, 8.3.2, and 8.4 contain the specific review interfaces for each DSRS section.

II. ACCEPTANCE CRITERIA

Requirements

Acceptance criteria are based on meeting the relevant requirements of the following Commission regulations:

1. Table 8-1 of this DSRS section lists the acceptance criteria the staff currently applies to electric power systems as modified for the NuScale integral pressurized-water rector (iPWR) design. Implementation of these criteria in accordance with applicable regulatory guides (RGs) and branch technical positions (BTPs) will provide assurance that systems will perform their design safety functions when required.

2. DSRS Sections 8.2, 8.3.1, 8.3.2, and 8.4 detail the specific acceptance criteria presented in Table 8-1. Each DSRS section also describes the technical rationale for applying these criteria to reviews of electrical power systems.

3. Title 10 of the *Code of Federal Regulations* (CFR), Section 52.47(b)(1), which requires that a DC application contain the proposed ITAAC that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, a facility that incorporates the DC has been constructed and will be operated in conformity with the DC, the provisions of the Atomic Energy Act (AEA), and the U.S. Nuclear Regulatory Commission's (NRC's) regulations;

4. 10 CFR 52.80(a), which requires that a COL application contain the proposed inspections, tests, and analyses, including those applicable to emergency planning, that the licensee shall perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will operate in conformity with the COL, the provisions of the AEA, and the NRC's regulations.

DSRS Acceptance Criteria

Specific DSRS acceptance criteria acceptable to meet the relevant requirements of the NRC's regulations identified above are set forth below. The DSRS is not a substitute for the NRC's regulations, and compliance with it is not required. As an alternative, and as described in more detail below, an applicant may identify the differences between a DSRS section and the design features (DC and COL applications only), analytical techniques, and procedural measures proposed in an application and discuss how the proposed alternative provides an acceptable method of complying with the NRC regulations that underlie the DSRS acceptance criteria.

III. REVIEW PROCEDURES

These review procedures are based on the identified DSRS acceptance criteria. For deviations from these acceptance criteria, the staff should review the applicant's evaluation of how the proposed alternatives provide an acceptable method of complying with the relevant NRC requirements identified in Subsection II.

The staff will review Section 8.1 of the safety analysis report (SAR) to ensure that it includes (1) a brief description of the utility grid and its interconnections to other grids and to the nuclear unit, (2) a brief general description of the onsite power system, (3) a brief description of the alternate alternating current (AAC) power source, if provided for SBO, and the associated interconnections to safety buses, (4) and the design bases, criteria, standards, RGs, and technical positions that will be implemented in the design of the electric power systems, including a description of the extent to which these criteria and guidelines are followed and a positive statement that the design conforms to each.

The staff will perform the review as follows:

1. Selected Programs and Guidance - In accordance with the guidance in NUREG-0800, "Introduction - Part 2: Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: Integral Pressurized Water Reactor Edition" (NUREG-0800 Intro Part 2) as applied to this DSRS Section, the staff will review the information proposed by the applicant to evaluate whether it meets the acceptance criteria described in Subsection II of this DSRS. As noted in NUREG-0800 Intro Part 2, the NRC requirements that must be met by an SSC do not change under the SMR framework. Using the graded approach described in NUREG-0800 Intro Part 2, the NRC staff may determine that, for certain structures, systems, and components (SSCs), the applicant's basis for compliance with other selected NRC requirements may help demonstrate satisfaction of the applicable acceptance criteria for that SSC in lieu of detailed independent analyses. The design-basis capabilities of specific SSCs would be verified where applicable as part of completion of the applicable ITAAC. The use of the selected programs to augment or replace traditional review procedures is described in Figure 1 of NUREG-0800, Introduction - Part 2. Examples of such programs that may be relevant to the graded approach for these SSCs include:

    - 10 CFR Part 50, Appendix A, General Design Criteria (GDC), Overall Requirements, Criteria 1 through 5
    - 10 CFR Part 50, Appendix B, Quality Assurance (QA) Program
    - 10 CFR 50.49, Environmental Qualification of Electrical Equipment (EQ) Program
    - 10 CFR 50.55a, Code Design, Inservice Inspection and Inservice Testing (ISI/IST) Programs
    - 10 CFR 50.65, Maintenance Rule requirements
    - Reliability Assurance Program (RAP)
    - 10 CFR 50.36, Technical Specifications
    - Availability Controls for SSCs Subject to Regulatory Treatment of Non-Safety Systems (RTNSS)
    - Initial Test Program (ITP)
    - Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)

This list of examples is not intended to be all-inclusive. It is the responsibility of the technical reviewers to determine whether the information in the application, including the degree to which the applicant seeks to rely on such selected programs and guidance, demonstrates that all acceptance criteria have been met to support the safety finding for a particular SSC.

2. In accordance with 10 CFR 52.47(a)(8), (21), and (22), and 10 CFR 52.79(a)(17), (20), and (37), for design certification or combined license applications submitted under Part 52, respectively, the applicant is required to (1) address the proposed technical resolution of unresolved safety issues and medium- and high-priority generic safety issues which are identified in the version of NUREG-0933 current on the date up to 6 months before the docket date of the application and which are technically relevant to the design; (2) demonstrate how the operating experience insights have been incorporated into the plant design; and, (3) provide information necessary to demonstrate compliance with any technically relevant portions of the Three Mile Island requirements set forth in 10 CFR 50.34(f), except paragraphs (f)(1)(xii), (f)(2)(ix), and (f)(3)(v) for a DC application, and except paragraphs (f)(1)(xii), (f)(2)(ix), (f)(2)(xxv), and (f)(3)(v) for a COL application. These cross-cutting review areas should be addressed by the reviewer for each technical subsection and relevant conclusions documented in the corresponding safety evaluation report (SER) section.

3. The staff will establish that the utility grid is adequately described, and that the interconnections between the nuclear unit, the utility grid, and other grids are clearly defined. The descriptions should state whether facilities are existing or planned; if planned, the respective completion dates should be provided.

4. The staff will confirm that the onsite power system is briefly described and that Section 8.3.1 and 8.3.2 of the SAR presents more detailed information.

5. The staff will confirm that the AAC power source, if provided for SBO, is briefly described and that Section 8.4 of the SAR provides more detailed information. This design feature may not be applicable to the passive NuScale design. If not applicable, the bases for acceptance of such a design should be documented in Section 8.4.

6. The staff will confirm that Table 8-1 lists the criteria and guidelines identified as being applicable to the design of electric power systems. The SAR should discuss the applicability of the criteria and guidelines listed and include a statement to the effect that they will be implemented or are implemented in the design of electrical power systems.

7. General Design Criterion (GDC) 17 found in Appendix A to 10 CFR Part 50 contains the requirements for the offsite and onsite electric power systems. Table 8-2 provides the staff interpretation of GDC 17.

8. For review of the NuScale DC application, the reviewer should follow the above procedures to verify that the design, including requirements and restrictions (e.g., interface requirements and site parameters), set forth in the final safety analysis report (FSAR) meets the acceptance criteria. The reviewer should also consider the appropriateness of identified COL action items. The reviewer may identify additional COL action items; however, to ensure these COL action items are addressed during a COL application, they should be added to the DC FSAR.

For review of a COL application, the scope of the review is dependent on whether the COL applicant references a DC, an early site permit (ESP) or other NRC approvals (e.g., manufacturing license, site suitability report or topical report).

For review of both DC and COL applications, SRP Section 14.3 should be followed for the review of ITAAC. The review of ITAAC cannot be completed until after the completion of Section 8.0.

IV. EVALUATION FINDINGS

The reviewer verifies that the applicant has provided sufficient information and that the review and calculations (if applicable) support conclusions of the following type to be included in the staff's SER. The reviewer also states the bases for those conclusions.

1. Section 8.1 of the SAR provides (1) a brief description of the utility grid and its interconnections to other grids and the nuclear unit, (2) a brief general description of the onsite alternating current and direct current power system, (3) a brief description of the AAC power source (if provided for SBO), and (d) the design criteria that have been implemented in the design of the electric power systems.

2. The staff has determined that an electric power system design that conforms to the applicable GDC, RGs, and BTPs set forth in Table 8-1 provides a sufficient basis for acceptance of the electric power system.

3. The staff concludes that the design criteria that have been implemented for the electric power system are in accordance with the acceptance criteria listed in Table 8-1 and are acceptable as noted below in the following sections of Chapter 8.

For DC and COL reviews, the findings will also summarize the staff's evaluation of requirements and restrictions (e.g., interface requirements and site parameters) and COL action items relevant to this DSRS section.

In addition, to the extent that the review is not discussed in other SER sections, the findings will summarize the staff's evaluation of the ITAAC, including design acceptance criteria, as applicable.

V. IMPLEMENTATION

The regulations in 10 CFR 52.17(a)(1)(xii), 10 CFR 52.47(a)(9), and 10 CFR 52.79(a)(41) establish requirements for applications for ESPs, DCs, and COLs, respectively. These regulations require the application to include an evaluation of the site (ESP), standard plant design (DC), or facility (COL) against the Standard Review Plan (SRP) revision in effect six months before the docket date of the application. While the SRP provides generic guidance, the staff developed the SRP guidance based on the staff's experience in reviewing applications for construction permits and operating licenses for large light-water nuclear power reactors. The proposed small modular reactor (SMR) designs, however, differ significantly from large light-water nuclear reactor power plant designs.

In view of the differences between the designs of SMRs and the designs of large light-water power reactors, the Commission issued SRM- COMGBJ-10-0004/COMGEA-10-0001, "Use of Risk Insights to Enhance the Safety Focus of Small Modular Reactor Reviews," dated August 31, 2010 (ML102510405) (SRM). In the SRM, the Commission directed the staff to develop

risk-informed licensing review plans for each of the SMR design reviews, including plans for the associated pre-application activities. Accordingly, the staff has developed the content of the DSRS as an alternative method for the evaluation of a NuScale-specific application submitted pursuant to 10 CFR Part 52, and the staff has determined that each application may address the DSRS in lieu of addressing the SRP, with specified exceptions. These exceptions include particular review areas in which the DSRS directs reviewers to consult the SRP and others in which the SRP is used for the review. If an applicant chooses to address the DSRS, the application should identify and describe all differences between the design features (DC and COL applications only), analytical techniques, and procedural measures proposed in an application and the guidance of the applicable DSRS section (or SRP section as specified in the DSRS), and discuss how the proposed alternative provides an acceptable method of complying with the regulations that underlie the DSRS acceptance criteria.

The staff has accepted the content of the DSRS as an alternative method for evaluating whether an application complies with NRC regulations for NuScale SMR applications, provided that the application does not deviate significantly from the design and siting assumptions made by the NRC staff while preparing the DSRS. If the design or siting assumptions in a NuScale application deviate significantly from the design and siting assumptions the staff used in preparing the DSRS, the staff will use the more general guidance in the SRP as specified in 10 CFR 52.17(a)(1)(xii), 10 CFR 52.47(a)(9), or 10 CFR 52.79(a)(41), depending on the type of application. Alternatively, the staff may supplement the DSRS section by adding appropriate criteria in order to address new design or siting assumptions.

VI. REFERENCES

1. See Table 8-1 for references.

DESIGN-SPECIFIC REVIEW STANDARD FOR mPOWER
TABLE 8-1
ACCEPTANCE CRITERIA AND GUIDELINES FOR ELECTRIC POWER SYSTEMS

The matrix of Table 8-1 identifies the acceptance criteria (denoted by “A”) and the guidelines (denoted by ”G”) and their applicability to the various sections of DSRS Chapter 8 for the NuScale design. The acceptance criteria define the Commission’s requirements for power systems that are important to safety. The guidelines amplify these requirements and provide a more explicit basis upon which to evaluate the conformance of the power systems to these requirements. This table does not include acceptance criteria and guidelines for those aspects of the power systems that are reviewed in accordance with sections other than DSRS Chapter 8.

The DSRS BTPs are listed in the table.

		APPLICABILITY (DSRS Section)				
CRITERIA	TITLE	8.2	8.3.1	8.3.2	8.4	REMARKS [a]
1. General Design Criteria, Appendix A to 10 CFR Part 50						
a. GDC 2	Design Bases for Protection Against Natural Phenomena		A*	A		8.2 See ADAMS Accession No. ML090260039
b. GDC 4	Environmental and Dynamic Effects Design Bases		A*	A		8.2 See ADAMS Accession No. ML090260039
c. GDC 5	Sharing of Structures, Systems, and Components	A*	A*	A*		
d. GDC 17	Electric Power Systems	A	A	A	A	
e. GDC 18	Inspection and Testing of Electrical Power Systems	A	A	A	A	
f. GDCs 33, 34, 35, 38, 41, and 44		A*	A*	A*		As they relate to the operation of electric power systems, encompassed in GDC 17, to ensure that the safety functions/systems described in GDCs 33, 34, 35, 38, 41, and 44 are accomplished.

CRITERIA	TITLE	8.2	8.3.1	8.3.2	8.4	REMARKS [a]
g. GDC 50	Containment Design Bases		A	A		
2. Regulations (10 CFR Parts 50 and 10 CFR 52)						
a. 10 CFR 50.34	Contents of Applications; Technical Information					For DC or COL applications submitted under 10 CFR Part 52, the application should include a table that identifies (a) TMI requirements set forth in 10 CFR 50.34(f), with the exceptions listed in 10 CFR 52.47(a)(8) or 10 CFR 52.79(a)(17), respectively; (b) those unresolved safety issues and medium- and high-priority generic safety issues that are identified in the version of NUREG-0933 current on the date up to 6 months before the submittal date of the application and that are technically relevant to the design, and (c) the application section where resolutions are addressed. See NUREG-0737, "Clarification of TMI Action Plan Requirements."
i. 50.34(f)(2)(v)	(Related to TMI Item I.D.3)	A*	A*	A*		
ii. 50.34(f)(2)(xiii)	(Related to TMI Item II.E.3.1)		A*			
iii. 50.34(f)(2)(xx)	(Related to TMI Item II.G.1)		A*			
b. 10 CFR 50.55a	Codes and Standards		A*	A*		Paragraph (h) incorporates IEEE Std. 603-1991 and specifies application of IEEE Std. 603 and IEEE Std. 279. See also: RG 1.153.
c. 10 CFR 50.63	Loss of All Alternating Current Power				A	

APPLICABILITY (DSRS Section) spans columns 8.2, 8.3.1, 8.3.2, 8.4.

CRITERIA	TITLE	APPLICABILITY (DSRS Section) 8.2	8.3.1	8.3.2	8.4	REMARKS [a]
d. 10 CFR 50.65(a)(4)	Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	A	A	A	A	Paragraph (a)(4),as it relates to the assessment and management of the increase in risk that may result from proposed maintenance activities before performing the maintenance activities.
e. 10 CFR 52.47(b)(1)	Contents of Applications	A	A	A	A	Paragraph (b)(1), as it relates to ITAAC (for design certification) sufficient to assure that the SSCs in this area of review will operate in accordance with the certification.
f. 10 CFR 52.80(a)	Contents of Applications; Additional Technical Information	A	A	A	A	
3. Regulatory Guides						
a. RG 1.6	Independence Between Redundant Standby (Onsite) Power Sources and Between Their Distribution Systems		G*	G		
b. RG 1.68	Initial Test Programs for Water-Cooled Nuclear Power Plants	G*	G*	G*	G*	
c. RG 1.32	Criteria for Power Systems for Nuclear Power Plants	G*	G*	G*		§8.2 As it relates to safety-related (Class 1E) and/or risk-significant SSCs. §8.3.1 As it relates to safety-related (Class 1E)

CRITERIA	TITLE	APPLICABILITY (DSRS Section) 8.2	8.3.1	8.3.2	8.4	REMARKS [a]
						and/or risk-significant SSCs . §8.3.2 As it relates to safety-related (Class 1E) and/or risk-significant SSCs .
d. RG 1.47	Bypassed and Inoperable Status Indication for Nuclear Power Plant Safety Systems		G*	G*		As it relates to safety-related and/or risk-significant SSCs.
e. RG 1.53	Application of the Single-Failure Criterion to Nuclear Power Plant Protection Systems		G*	G*		See also: IEEE Std. 379-2003, "Application of the Single-Failure Criterion to Nuclear Power Generating Station Safety Systems," as endorsed by RG 1.53.
f. RG 1.63	Electric Penetration Assemblies in Containment Structures for Nuclear Power Plants		G	G		See also: IEEE Std. 242-1986, "IEEE Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems"; IEEE Std. 317-1983 (reaffirmed 1992), "IEEE Standard for Electric Penetration Assemblies in Containment Structures for Nuclear Power Generating Stations"; and Section 5.4 of IEEE Std. 741-1986, "Criteria for the Protection of Class 1E Power Systems and Equipment in Nuclear Power Generating Stations," as

CRITERIA	TITLE	APPLICABILITY (DSRS Section) 8.2	8.3.1	8.3.2	8.4	REMARKS [a]
						endorsed by RG 1.63.
g. RG 1.75	Physical Independence of Electric Systems		G	G		See also: IEEE Std. 384-1992, "IEEE Standard Criteria for Independence of Class 1E Equipment and Circuits," as endorsed by RG 1.75.
h. RG 1.81	Shared Emergency and Shutdown Electric Systems for Multi-Unit Nuclear Power Plants		G*	G*		§8.3.1 As it relates to the sharing of SSCs of the onsite ac power system - Regulatory Positions C.2 and C.3. §8.3.2 As it relates to the sharing of SSCs of the dc power system, noting that Regulatory Position C.1 states that multiunit sites should not share dc systems.
i. RG 1.106	Thermal Overload Protection for Electric Motors on Motor-Operated Valves		G*	G*		
j. RG 1.118	Periodic Testing of Electric Power and Protection Systems		G*	G*		See also: IEEE Std. 338-1987, "IEEE Standard Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems," as endorsed by RG 1.118.
k. RG 1.128	Installation Design and Installation of Vented Lead-Acid Storage Batteries for Nuclear Power Plants			G*		See also: IEEE Std. 484-2002, "IEEE Recommended Practice for Installation Design and Installation of Vented Lead-Acid Storage Batteries for Stationary

CRITERIA	TITLE	APPLICABILITY (DSRS Section) 8.2	8.3.1	8.3.2	8.4	REMARKS [a]
						Application," as endorsed by RG 1.128. In addition, IEEE Std. 485-1997, "IEEE Recommended Practice for Sizing Lead-Acid Batteries for Stationary Applications," provides a method acceptable to the staff for sizing stationary lead acid batteries, as endorsed by RG 1.212..
l. RG 1.129	Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants			G*		See also: IEEE Std. 450-2002, "IEEE Recommended Practice for Maintenance, Testing and Replacement of Vented Lead-Acid Batteries for Stationary Application," as endorsed by RG 1.129.
m. RG 1.153	Criteria for Safety Systems		G*	G*		See also: IEEE Std. 603, "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations" as incorporated by 10 CFR 50.55a(h) and endorsed by RG 1.153
n.RG 1.155	Station Blackout				G*	See also: NUMARC 8700, "Guidelines and Technical Bases for NUMARC Initiatives Addressing SBO at Light Water Reactors," Revision 0, November 1987, as endorsed by RG 1.155.
o.RG 1.160	Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	G	G	G	G	See also: NUMARC 93-01, "Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 2, April 1996, as endorsed by RG 1.160.
p.						Deleted

CRITERIA	TITLE	8.2	8.3.1	8.3.2	8.4	REMARKS [a]
		APPLICABILITY (DSRS Section)				
q. RG 1.204	Guidelines for Lightning Protection of Nuclear Power Plants	G	G	G	G	See also: IEEE Std. 665-1995 (Reaffirmed 2001), "IEEE Standard for Generating Station Grounding," IEEE Std. 666-1991 (Reaffirmed 1996), "Design Guide for Electric Power Service Systems for Generating Stations"; IEEE Std. 1050-1996, "Guide for Instrumentation and Control Equipment Grounding in Generating Stations"; IEEE Std. C62.23-1995 (Reaffirmed 2001), "Application Guide for Surge Protection of Electric Generating Plants," as endorsed by RG 1.204.
r. RG 1.206	Combined License Applications for Nuclear Power Plants (LWR Edition)	G	G	G	G	RG 1.206 provides guidance for the review of SARs submitted by COL applicants and contains criteria applicable to all sections of DSRS Chapter 8.
4. DSRS Branch Technical Positions						
a.DSRS BTP 8-2	Use of Onsite AC Power Sources for Peaking		G		G	
b.DSRS BTP 8-3	Stability of Offsite Power Systems	G				
c.DSRS BTP 8-6	Adequacy of Station Electric Distribution System Voltages	G	G			
5. NUREG Reports						

CRITERIA	TITLE	APPLICABILITY (DSRS Section) 8.2	8.3.1	8.3.2	8.4	REMARKS [a]
a. NUREG-0718, Revision 1	Licensing Requirements for Pending Applications for Construction Permits and Manufacturing License		G*	G*		See TMI Item I.D.3, "Safety System Status Monitoring," regarding application of RG 1.47.
b. NUREG-0737	Clarification of TMI Action Plan Requirements		G*			See TMI Items II.E.3.1,"Emergency Power Supply for Pressurizer Heaters," and II.G.1, "Emergency Power for Pressurizer Equipment."
c. NUREG/CR-0660	Enhancement of Onsite Diesel Generator Reliability		G*			Reference Only
d. NUREG-1793	Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design	G	G	G	G	NUREG-1793 provides the staff's safety review of the AP1000 standard design against the requirements of 10 CFR Part 52, Subpart B and describes the basis for acceptance of passive features and systems not found in current operating reactors specific to the AP1000 design.
6. Commission Papers (SECY)						
a. SECY-90-016	Evolutionary Light Water Reactor Certification Issues and Their Relationships to Current Regulatory Requirements,1990	G*	G*		G*	As it relates to the use of AAC power sources and application of RTNSS at ALWRs provided with passive safety systems.
b. SECY-94-084	Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems in Passive Plant Designs, 1994	G*	G*		G*	As it relates to the use of AAC power sources and application of RTNSS at ALWRs provided with passive safety systems.

CRITERIA	TITLE	APPLICABILITY (DSRS Section) 8.2	8.3.1	8.3.2	8.4	REMARKS [a]
c. SECY-95-132	Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems (RTNSS) in Passive Plant Designs, 1995	G*	G*		G*	As it relates to the use of AAC power sources and application of RTNSS at ALWRs provided with passive safety systems.
d. SECY-91-078	EPRI's Requirements Document and Additional Evolutionary LWR Certification Issues, 1991	G*	G*		G*	As it relates to the inclusion of an alternate power source to nonsafety-related loads at evolutionary plant designs.
e. SECY-05-0227	Final Rule: AP1000 Design Certification, 2005	G				As it relates to an exemption to the GDC 17 requirement for two physically independent offsite circuits specifically for the AP1000 passive reactor design.
7. Bulletins						
a. NRC Bulletin 2012-01 July 2012	Design Vulnerability in Electric Power System	G	G			As it relates to open-phase protection and monitoring for the offsite power supplies to the plant, as described in this Bulletin.

[a] Related industry standards and guidelines are included for reference only. Refer to the specific DSRS section for applicability. The staff will review new applications using the latest version of industry codes and standards endorsed by the NRC. Proposed use of unendorsed versions of codes and standards will be reviewed on a case-by-case basis.

*__Important__: The reviewer must determine if the specific acceptance criteria presented above apply to theNuScale finalized design when presented for staff review (DCD).